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ABSTRACT

Schemata, as defined recently by reading researchers, represent generic concepts which are stored in memory. They include underlying objects, situations, events, actions, and sequences of actions for use in interpreting new experiences. Research on schemata suggests that teachers need to pay attention to the types of questions they ask when discussing reading assignments and to vary both questioning techniques and instructional content so that students can develop all the reading skills they will need to increase their comprehension. A list of five references for further reading is included. (JW)

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Schemata

One result of the recent attention to reading in all areas by researchers has been the reintroduction and wide-spread use of the term "schema" and its plural form "schemata." The following is an attempt to provide a definition and discussion on the term, as it may relate to research and teaching.

What Are Schemata?

Schemata are the conceptual plans or structures that readers (for instance) bring to their understanding of a text. E. Marcia Sheridan has stated that the "system for storing and retrieving knowledge in memory is . . . called schema theory. Schemata . . . represent generic concepts which are stored in memory. These generic concepts include underlying objects, situations, events, actions, and sequences of actions. These objects etc. are not atomic, but contain the network of interrelations with other constituent concepts. In other words, the way in which a particular concept is stored is not by remembering that isolated event in its totality down to its most basic components, but by identifying those aspects of the event related to other concepts already stored. In effect we make [connections] between the information in the text and what we already know. Thus schemata represent stereotypes of concepts."

What is an Example?

In essence, people store and arrange their experiences as schemata to use in interpreting new experiences. J. Jaap Tuinman offers an example:

> A schema, quite simply put, is an abstraction of reality. Traveling much, I have a well developed hotel room schema; I know the general layout of even new rooms: I know to expect a TV, telephone, a specific kind of furnishing, a notice of room rates, a heat/cooling control, etc. Note that my schema, though well fleshed out, is general. I don't know the kind of TV, the type of temperature control, the specific arrangement of the furniture. Notice also that I have acquired this schema from experience, from repeated encounters with similar phenomena. Being capable of some learning, I have abstracted the features common to these phenomena and constructed a hotel room schema. Sporadically, I encounter an unfamiliar room. This is an occasion to revise and update my hotel room schemata.

Are All Schemata the Same?

No, all schemata are not the same. The reader must decide subconsciously what schemata are necessary for understanding the text. Two general kinds of schemata are described in "Effects of the Reader's Schema at Different Points in Time," a report by Richard Anderson, and others. The first type, "textual schemata," embodies knowledge of discourse conventions that signal organization, with specialized conventions characteristic of distinct text forms and other conventions common to most text forms. These organizational schemata include a story schema, a personal letter schema, a news article schema, a scientific report schema, and so on. The second type of schemata, "content schemata," embodies the reader's existing knowledge of real and imaginary worlds. "What the reader already believes about a topic helps to structure the interpretation of new messages about this topic. There is good reason to believe that content schemata are more important to reading comprehension than textual schemata" (p. 4).

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What Are the Implications for Teaching?

Dolores Durkin has gleaned two deceptively simple statements that summarize research on schemata. One is that "the more we know before we read, the more we learn when we read." The second, which she attributes to G. V. Glass, is that "the maintenance . . . of old knowledge is no less important than the discovery of new knowledge." These tenets emphasize the need for more diagnosis and prescription in reading instruction. That is, reading teachers and content area teachers need to be keenly aware of what their students bring into class as far as prior experience and approaches to reading are concerned. Various prereading exercises should be conducted to acclimate students to the reading materials and to orient students toward the proper goals and expectations of the reading assignment.

Teachers will also need to expose the students to many varieties of textual schemata so that the children can get used to adjusting their reading habits to various reading tasks. It is generally accepted that reading a math text, reading a history lesson, reading a short story, and reading "Teen Magazine" do not require the same amounts of reading expertise. Schemata help to explain why this is so and suggest what teachers can do to give students practice in adjusting their reading strategies.

Research on schemata suggests that teachers need to pay attention to the types of questions they ask when discussing reading assignments. Some children have enough background knowledge on a topic to give answers without reading assigned passages. In other cases teachers ask too many literal questions about the reading assignment, thereby focusing children's attention on bottom-up processing rather than stimulating their critical reading skills.

Basically, teachers should realize that schemata are simply ways of organizing information in memory, that schemata create expectations about what appears in print, and, perhaps most important, teachers need to vary both questioning techniques and instructional content so that students can develop all the reading skills they will need to increase their comprehension of the world in print and the world in general.

Sources for Further Reading

Anderson, Richard C., and others. *Effects of the Reader's Schema at Different Points in Time.* Technical Report No. 119. Cambridge, Mass.: Bolt, Beranek and Newman, Inc.; Urbana, Ill.: Center for the Study of Reading, 1979. 36 pp. [ED 169 523]

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1111 Kenyon Road, Urbana, Illinois 61801
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